

There are many problems within the current Delaware Department of Natural Resources and Environmental Control. First and foremost, what is their mission? They are charged with protecting human health and the environment, but have become an arm of economic development interests. To correct this, DNREC role must be limited to promulgating regulations, and as the natural resources police issue citations to violators to then be prosecuted by the Office of the Attorney General. Put an end to the practice of negotiated fines with the Secretary.

My most recent experience with DNREC is more troubling. What happens when they are presented with data showing contamination leaving a site and fail to acknowledge it represents a risk to human health? Well, the citizens impacted have to conduct their own studies of the magnitude of the environmental problem and hire experts to assist them in legal actions. I happen to be one of those experts in analytical method development, chemical analysis, site assessment, and regulatory development of Federal solid waste regulations who volunteer to help local communities.

Recently, following review of the Long Term Stewardship Monitoring (LTSM) Data for the Allen Harim-Millsboro site which was the old Pinnacle-Vlasic plant, I presented my finding to DNEC SIRB and then formally petitioned the Secretary to declare the site's Certificate of Completion of Remedy (COCR) null and void. The first response was not from a manager, and I rebutted it to the Program Administrator. I am now in receipt of his denial of the petition, which leaves little citizen recourse except through the courts.

The key finding in the monitoring data from the old Pinnacle-Vlasic site is that testing from the deeper well MW23D near the entrance of the facility from Iron Branch Road has detected nitrate concentrations above the levels for safe consumption since it was installed. DNREC's response:

Nitrate: Several groundwater samples, in several of the perimeter wells, do show an exceedance of the nitrate MCL. However, statistical analysis utilizing the GSI Mann-Kendall for trend analysis, show a stable or decreasing trend in the perimeter wells of MW23D, MW23S, MW16 and MW13. This analysis was based on the groundwater sampling results from August, 2013 to June, 2017. As such, DNREC-SIRS considers the nitrate concentrations stable.

That any boundary well exceed the Maximum Contaminate Level (MCL) should be a call to action. To where beyond the boundary and into the community of ~100 homes has the contamination spread? Recent individual residential well tests in the community found unsafe levels in 3 of 6 wells tested furthest from the site. More citizen sampling will now have to be done without any aid from DNREC and costly testing for heavy metal contaminants found in 8 of 12 wells in 2013.

Another area of concern raised with DNREC was the inability of arsenic testing performed for the sites LTSM had not been achieving low enough method detection limits to be meaningful. DEREK responded:

Arsenic: HSCA Screening Values are used to identify contaminants of potential concern (COPCs) and are an extrapolation of toxicity findings to achieve a 1.0×10^{-6} value. DNREC-SIRS defaults to the Delaware Public Drinking Water Regulations Maximum Contaminate Level (MCL) of 10 ug/L for a remedial determination. The MCL for arsenic was used as a remedial measure for this site. As such,

DNREC-SIRS considers the arsenic in groundwater to be stable. DNREC-SIRS is unclear where the 0.1 ug/L (sic -0.01 ug/L) reference is from. DNREC-SIRS believes this could be a reference to an Instrument Detection Limit (IDL). There is a significant difference of an IDL compared to the Method Detection Limit (MDL). While the IDL is an indication of instrument capabilities, it does not take into account variability with samples, which the MDL does.

In recent years there could be cancer risks greater than 1 in 10,000 that the testing would never see. Why accept testing that can **not** see the remediation goals? You don't want to know the risks and can say nothing was detected.

https://www.epa.gov/sites/production/files/2015-09/documents/chapt4_2001.pdf

To the first response to my petition I wrote:

For arsenic, the MCL is not a risk based limit, but economically set based on treatment costs in western states that have no bearing on the risk exposure to Delaware residents. Thus, screening for arsenic at the at MCL 10 ug/L is a significant $1.9E-4$ risk. The screening level is 0.052 ug/L Arsenic & a $1E-6$ risk.

ICP-MS analysis are capable of detecting Arsenic reliably with detection at and below 0.01 ug/L, and should be employed in all testing. To not require lower detections be achieved ignores the cancer risks poised to the community.

The Agent 7900 ICP-MS reports method detection limits following EPA Method 200.8 of 0.008 ug/L arsenic. I rounded that off to 0.01 ug/L.

<https://www.agilent.com/cs/library/applications/5991-4938EN.pdf>

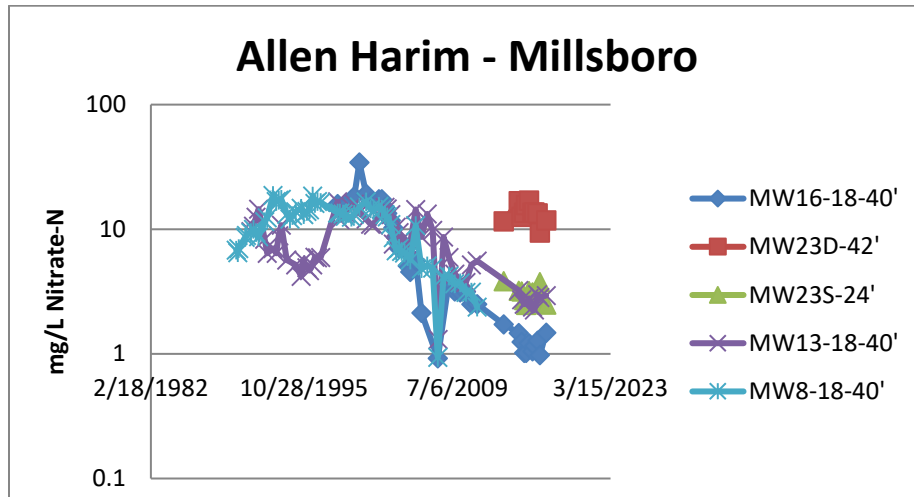
DNREC also seems to believe that dissolved (filtered) groundwater samples are representative of drinking water. Beside the fact that residential wells may not be equipped with filters, there is the instability of anaerobic groundwater once exposed to the air when removed from the well. I didn't have to look far to find a rebuttal to this idiocy.

Filtration of groundwater samples has been identified by the Connecticut Department of Energy and Environmental Protection (DEEP) as a concern because it could produce false analytical test results, thus negatively impacting the decision-making process during site characterization and/or regulatory compliance demonstration. Consequently, the use of filtered groundwater samples for site characterization and compliance monitoring is generally considered inappropriate.

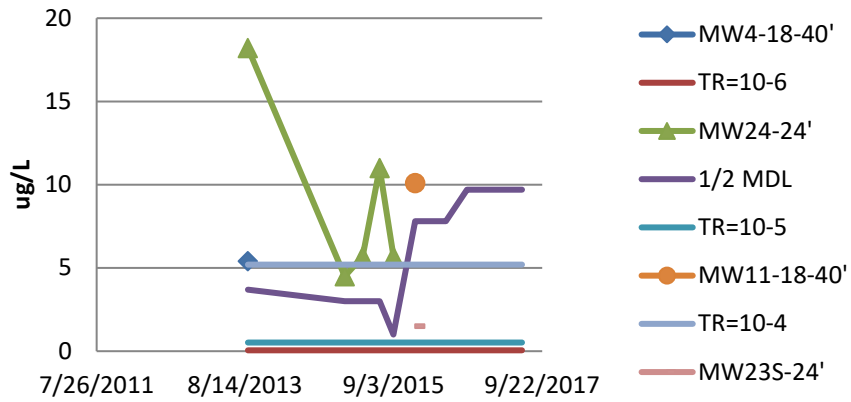
http://www.ct.gov/deep/lib/deep/site_clean_up/guidance/site_characterization/filters_technical_memo_guidance_final.pdf.

In the case of arsenic at the now Allen Harim-Millsboro site, all the MW11 & 24 results became non-detect upon filtering. Due to measurement variability two MW4 dissolved tests were measured greater than the total analysis. They should be equal or less, but have significant uncertainty close to method detection limits.

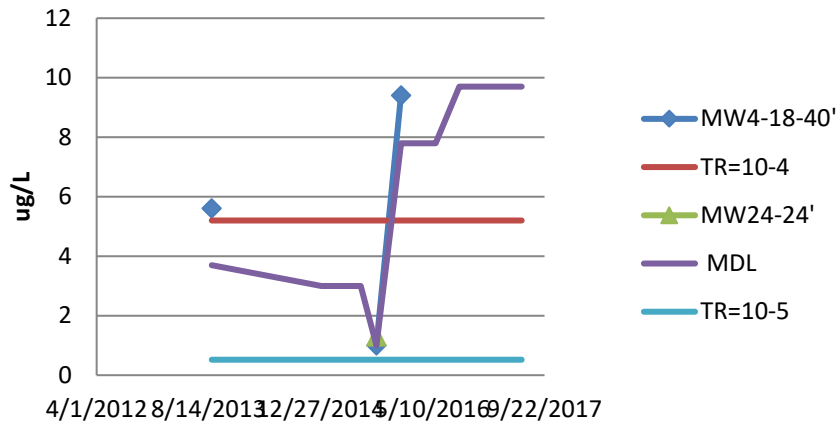
When will DNREC regain its mission and again protect the health of the citizens of this State and its environmental resources? It can't happen soon enough.

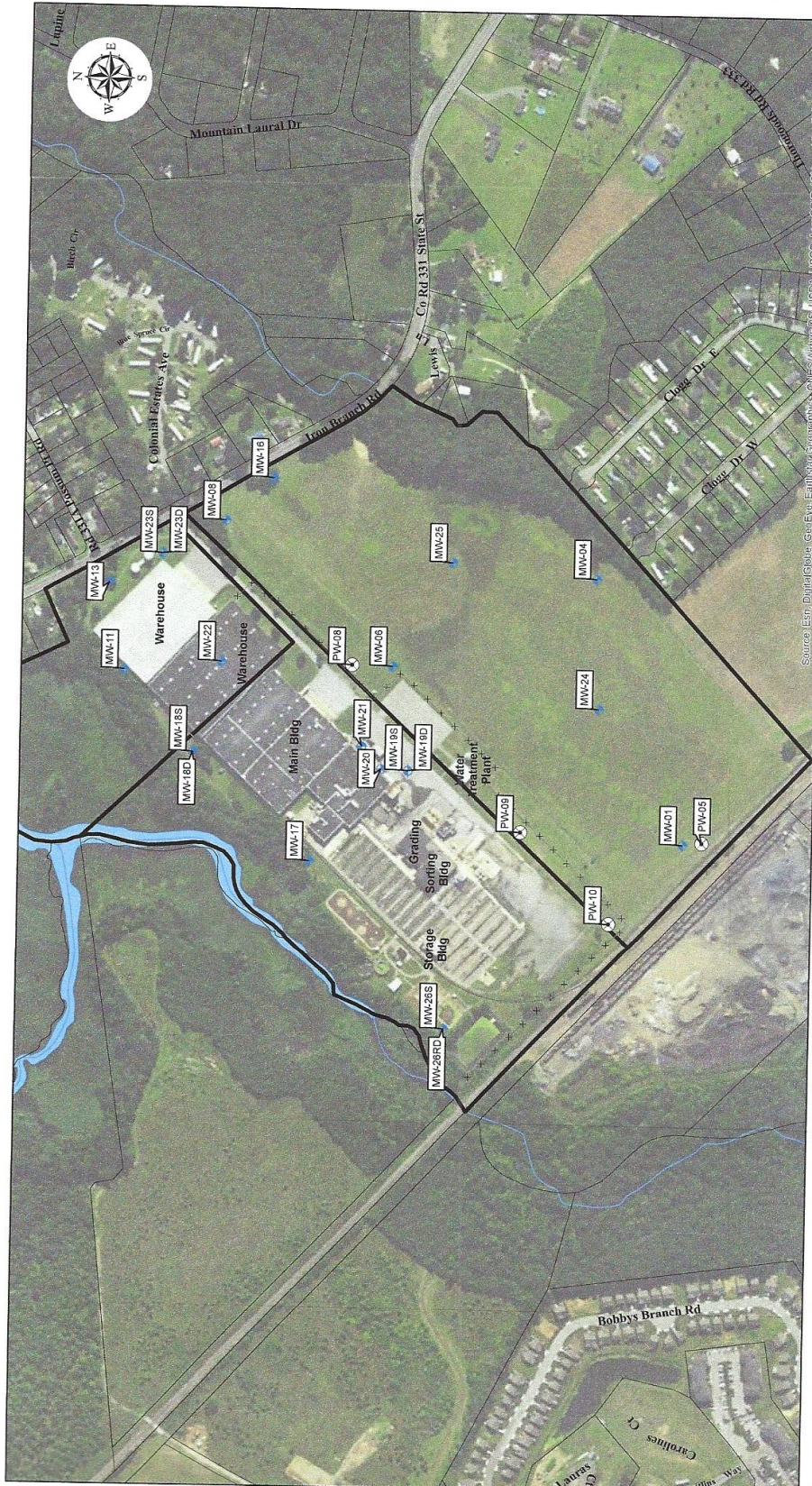


Arsenic (total)



Arsenic (Dissolved)





Legend

- Site Parcel
- Railroad Track
- County Tax Parcel
- Water Supply Well
- FlowLine
- Fence
- Lake/Pond

Source: LTS Sampling Report 3Q16 - Fig2-Site Map

Source: Esri DigitalGlobe, GeoEye, Earthstar Geographics, CNR/Airphoto, USDA/GSA, USGS, AeroGRID, IGN, and the GIS User Community

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Site Base Map	
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